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EEprom card with defective cell substitution.

(57) A system of Flash EEprom memory chips with controlling circuits serves as non-volatile memory such as that provided by magnetic disk drives. Improvements include the ability to remap and replace defective cells with substitute cells. The remapping is performed automatically as soon as a defective cell is detected. When the number of detects in a Flash sector becomes large, the whole sector is remapped. In one embodiment, the Flash EEprom memory is implemented on a memory card adapted to plug into a computer system. In another embodiment, the system of Flash EEPROM memory chips with controlling circuits is implemented on a memory card adapted to plug into a computer system.

## **EUROPEAN SEARCH REPORT**

Category	Citation of document with indica of relevant passag		Relevant to claim	CLASSIFICATION OF THI APPLICATION (Int.CL5)
A	AU-A-557 723 (BLUE CIF LIMITED) * the whole document 3		1,4,5 G06F11/20 G11C16/06 G06F3/06 G06F12/08	
<b>A</b>	COMPUTER DESIGN, vol.28, no.5, March 1989, LITTLETON, MASSACHUSETTS US pages 30 - 32, XP000097567 R. WILSON '1-Mbit flash memories seek their role in system design' * the whole document *		1	
A	EP-A-0 086 886 (INTERNATIONAL BUSINESS MACHINES CORPORATION) * abstract *		2	
A	GB-A-2 136 992 (GEORG * the whole document *		1	
A	EP-A-0 220 718 (TOPPAN PRINTING CO., LTD.) * the whole document *		1	TECHNICAL FIELDS SEARCHED (Int.Cl.5)
P,A	US-A-4 896 262 (WAYAMA ET AL.) * the whole document *		1,2	G06F G11C
A	& PATENT ABSTRACTS OF JAPAN vol. 10, no. 30 (P-426) 5 February 1986 & JP-A-60 178 564 (MEIDENSHA KK) * abstract *		1	
L	US-A-4 945 535 (HOSOTANI ET AL.)		1	
A	* the whole document '& PATENT ABSTRACTS OF vol. 13, no. 261 (P-88 & JP-A-01 054 543 (MITCORP.) 2 March 1989 * abstract *	JAPAN 35)	1	
	The present search report has been of	drawn up for all claims  Date of completion of the search		Examiner
THE HAGUE		30 December 199	4 Ab	salom, R
X : part Y : part doc	CATEGORY OF CITED DOCUMENTS icularly relevant if taken alone icularly relevant if combined with another ment of the same category	T: theory or princip E: earlier patent do after the filing d D: document cited L: document cited f	le underlying th cument, but pub ate in the applicatio or other reasons	e invention lished on, or n
	nological background -written disclosure	&: member of the s		